

CLAIMS

What is claimed is:

1. A storage server embedded code backup method for use on a storage server having a nonvolatile programmable system memory module and a mass storage module, with the memory module being used to store a set of embedded code, for the purpose of providing a backup and recovery capability to the embedded code;
the storage server embedded code backup method comprising:
partitioning a backup region from the storage space of the storage server's mass storage module;
- 10 creating a duplicated copy of the embedded code in the memory module as backup and storing the backup copy into the backup region in the storage server's mass storage module; and
in the event of the embedded code being corrupted, moving the backup copy of embedded code stored in the backup region in the storage server's mass storage module
15 back to the storage server's system memory module to thereby restore the corrupted embedded code in the system memory module.
2. The storage server embedded code backup method of claim 1, wherein the storage server's mass storage module is a RAID unit.
3. The storage server embedded code backup method of claim 1, wherein the embedded code stored in the storage server's system memory module includes a server-specific operating system and at least one server-specific application.

4. A storage server embedded code backup system for use with a storage server having a nonvolatile programmable system memory module and a mass storage module, with the memory module being used to store a set of embedded code, for the purpose of providing a backup and recovery capability to the embedded code;
- 5 the storage server embedded code backup system comprising:
 - a backup region partitioning module, which allows a user-operated session to partition a backup region from the storage space of the storage server's mass storage module;
 - a backup checking module, which is capable of checking whether the backup region in the storage space of the storage server's mass storage module stores a backup copy
- 10 of the embedded code in the storage server's system memory module;
 - a backup creating module, which is capable of creating a duplicated backup copy of the embedded code in the storage server's system memory module and storing the backup copy into the backup region in the storage server's mass storage module;
 - a code inspecting module, which is capable of being activated at the boot and during operation of the storage server to inspect whether the embedded code in the system memory module is corrupted, and if yes, generating a recovery enable message; and
 - a recovery module, which is capable of being activated in response to the recovery enable message from the code inspecting module to move the backup copy stored in the backup region in the storage server's mass storage module back to the system memory module to thereby restore the corrupted embedded code in the system memory module.
5. The storage server embedded code backup system of claim 4, wherein the storage server's mass storage module is a RAID unit.

6. The storage server embedded code backup system of claim 4, wherein the embedded code stored in the storage server's system memory module includes a server-specific operating system and at least one server-specific application.
7. A storage server embedded code backup system for use with a storage server having a nonvolatile programmable system memory module and a mass storage module, with the memory module being used to store a set of embedded code including a server-specific operating system and at least one server-specific application, for the purpose of providing a backup and recovery capability to the embedded operating system and application;
 - the storage server embedded code backup system comprising:
 - 10 a backup region partitioning module, which allows a user-operated session to partition a backup region from the storage space of the storage server's mass storage module;
 - a backup checking module, which is capable of checking whether the backup region in the storage space of the storage server's mass storage module stores a backup copy of the embedded operating system and application in the storage server's system memory
 - 15 module;
 - a backup creating module, which is capable of creating a duplicated backup copy of the embedded operating system and application in the storage server's system memory module and storing the backup copy into the backup region in the storage server's mass storage module;
 - 20 a code inspecting module, which is capable of being activated at the boot and during operation of the storage server to inspect whether the embedded operating system and

application in the system memory module is corrupted, and if yes, generating a recovery enable message; and

a recovery module, which is capable of being activated in response to the recovery enable message from the code inspecting module to move the backup copy stored in the
5 backup region in the storage server's mass storage module back to the system memory module to thereby restore the corrupted embedded operating system and application in the system memory module.

8. The storage server embedded code backup system of claim 7, wherein the storage server's mass storage module is a RAID unit.

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